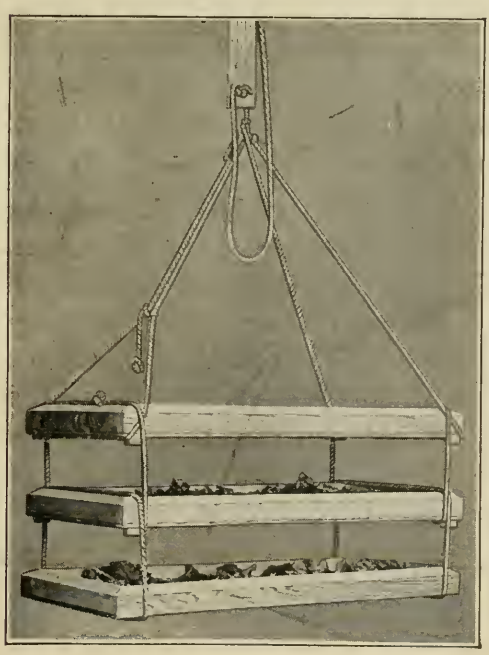
Home Drying
of
Fruits
and
Vegetables



PURPOSE OF THIS BULLETIN

THERE are many ways of saving summer products for winter use. Of these, the drying of fruits and vegetables is but one.

In issuing this bulletin, it is not intended to suggest the drying of products in preference to canning, pickling, preserving or storing, but simply to present drying as an economical and practical method of saving food, particularly when any of the other methods cannot be easily or economically adopted.

This bulletin gives directions for drying many varieties of products. It is not expected that anyone will find it practical or profitable to dry everything mentioned, but from the long list given each housewife will be enabled to dry such products as she desires.

HOME DRYING

of

FRUITS and VEGETABLES

Compiled and Edited
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of the
Agricultural Extension Department

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Advantages of Home Drying

HOME drying can be done by anyone, anywhere, without extra expense for fuel or equipment and with very little extra work.

1. The process is simple—any boy or girl can make the equipment and do the drying.
2. No extra fuel is required—the drying can be done with the same heat used in carrying on the ordinary household duties.
3. Dried fruits and vegetables make wholesome food.
4. Drying preserves the flavor of the product.
5. Drying saves the product, saves storage space, saves transportation. The product is stored in ordinary paper sacks.
6. To dry food products is to save them for food. It is therefore patriotic as well as good business.

HOME DRYING

At no other time was it so important to dry or can fruit or vegetables in the home as it is this year, as commercially canned products will be hard to obtain. In a special bulletin, "Food Conservation," recently issued by the United States Department of Agriculture, the following statement, of greatest interest to every family, is made:

"We are informed by the U. S. Government that it has contracted for 65 per cent of the output of the commercial canners of the country, and that the Allies will probably take over the other 35 per cent. This information should induce American housewives to preserve vegetables which are plentiful in the summer, for winter consumption."

First bottle contains fresh peas; second bottle same peas dried; third bottle same peas after being restored

This situation emphasizes the fact that waste is bad management; saving is profitable. Those who would provide themselves with plenty of fruits and vegetables next winter at a minimum cost, must eliminate waste now and can or dry the surplus.

We Can Save Everything

There isn't anything grown in the garden or orchard that we cannot save in some way. It can be pickled, or dried, or canned. It can be buried in the ground or in sand or sawdust in the cellar, or it can be simply put in the cellar.

The over-abundance produced in the summer should be the normal supply of the winter, and the individual family should conduct drying on a liberal scale.

Winter buying of vegetables and fruits is exceedingly costly, as you pay for transportation, cold storage and commission mer-

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The process of home drying described in this bulletin was developed by H. S. Mobley of the Agricultural Extension Department, International Harvester Company of N. J. (Inc.), and has been used and demonstrated by him during the past 15 years.

chants' charges and profits. Summer is the time of lowest prices and summer is, therefore, the time to buy for winter use.

Home drying or canning of vegetables enables us to save what otherwise would be wasted in the home garden. For example: When we gather peas or beans, we should pick all that are in condition, and if the surplus is too small to market, we should dry or can it.

Drying can be done at little or no extra cost for fuel, if we utilize the heat used in other home work.

Any one can dry fruits and vegetables.

It is our duty to dry, can or preserve in some manner everything that would be wasted.

Little Storage Space Required

Drying was generally done by our ancestors but has been little practiced in recent years. It is important and economical in every farm, town, village or city home. To the city dwellers it has the special advantage that a great deal can be stored in a small space and at little or no expense. One hundred pounds of vegetable food can be reduced to 10 pounds by drying.

Any Food Product Can Be Dried

Many things are better canned than dried; others are better dried than canned. But if we cannot get cans or jars enough for canning there is scarcely any food product that cannot be dried in the home with no other equipment than what every family possesses or can easily make.

Drying saves the product, saves storage space, saves transportation. Dried products can be shipped anywhere—to hot or cold countries, to the trenches. They may be kept anywhere, so long as they are in air-tight containers and are out of the reach of rats or mice, and will keep as long as the air does not reach them.

Anyone who will carefully follow the simple directions can successfully dry and save any product. When desired for food

Three pounds of rhubarb are reduced to a few ounces by drying

all products can be partly restored, many of them to nearly their original condition.

The housewife who takes vegetables fresh from the garden and follows directions, being careful not to use too much heat in drying, will find, when she restores the dried product, that she has preserved all the taste and nutrition originally contained in the green vegetables.

Some of the points in drying cannot be explained—they can be learned only by doing the work yourself. But do not be confused or discouraged by this for the process is very simple and it will be a matter of surprise to you how easily it can be done and the different conditions overcome.

The products that can be dried are almost innumerable. The list embraces everything from the garden and orchard, including tomatoes, watermelons, and cantaloupes. It includes such highly perishable products as eggs, cream, cottage cheese and lean meats.

Expensive Equipment Not Necessary

The equipment for drying is as simple as the method. It consists of three frames such as any boy can make, any kind of a cook stove: a pot or pan or a tin bucket: a wire basket, or a flour sack, or even a piece of cheese cloth that can be fashioned into the shape of a bag by bringing the four corners together: a few pie pans, some dinner plates and an earthenware dish or jar.

Each of the frames should be about 27 inches long, 14 inches wide and 1½ inches deep. The sides and ends can be made of wood, and the bottom should be of galvanized window screen wire, fastened with double pointed tacks. The rack and harness shown in the cut were made by an eight-year old boy and what a young boy can do, anyone can do.

The heat from the stove goes up readily from the center and if the racks are too long, the product in the ends will not dry as

Two pounds of cottage cheese before drying; after drying weighs six ounces

rapidly as the rest. Just make the rack to fit the stove.

We must keep the racks clean. If they are any wider than 14 inches they cannot be placed in an ordinary dishpan. When you are through using the racks hang them on a nail in the pantry.

How to Make a Drying Rack

Get two pieces of small sized rope, or window weight cord, each six feet long. Tie the ends of each piece together, making two loops, each exactly 30 inches long. (Figure 2.) Place one loop around one end of the frame; the other loop around the other end (Figure 4). Bring the upper ends of the loops together and fasten them with a third loop, or doubled rope, sufficiently long to reach from a few feet above the stove to a firm hook in the ceiling (Figure 3). Near each end of a block of wood 8 inches long and 1½ inches wide, bore a hole large enough to let the doubled rope pass through easily. Pass the end of the upright rope through one hole and shove the block down to the junction of the two loops (Figure 3). Tie a knot in the upright rope to keep the lower end of the block from slipping up; then pass the double rope through the upper hole in the block (Figure 1). Place the upper end of the upright loop over the hook in the ceiling.

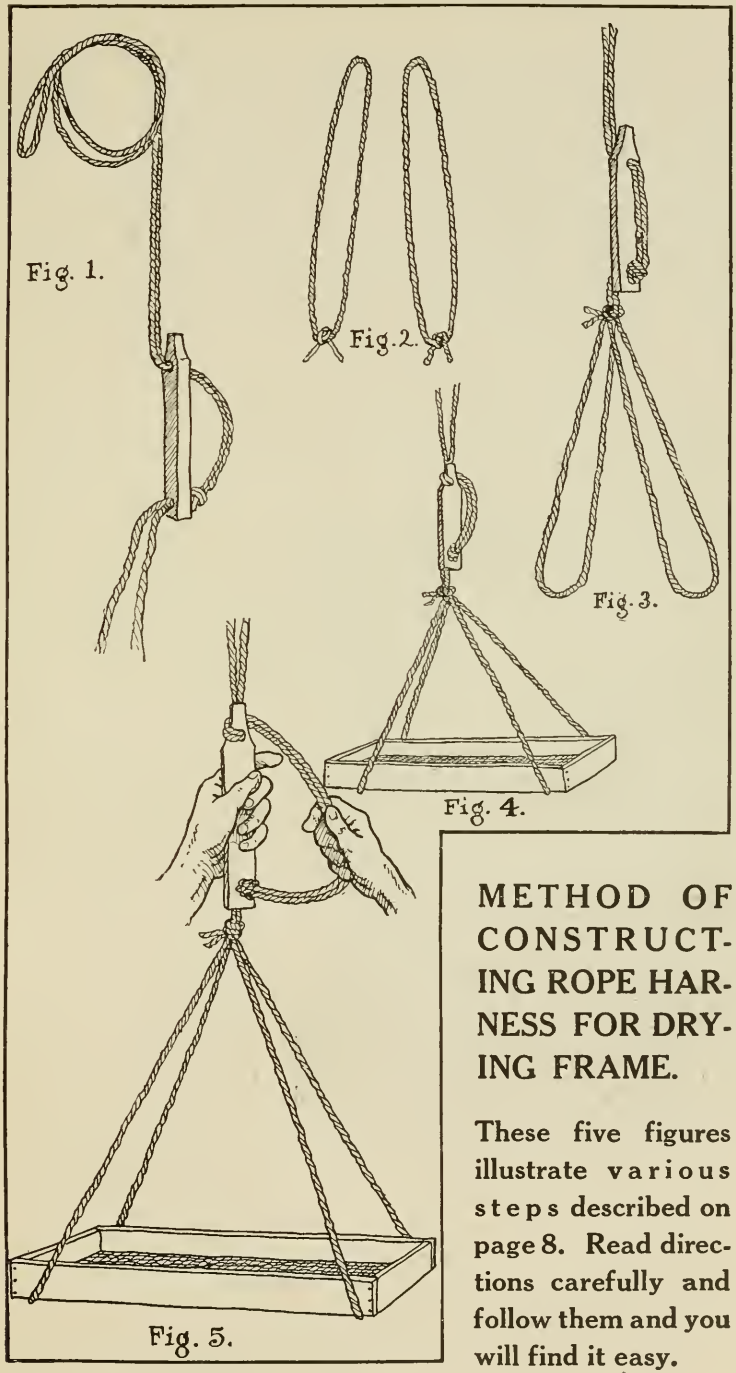
The purpose of the block of wood is to make it easy to adjust the height of the frame. To raise the frame, pull the rope through the upper hole in the block until the desired height is reached, then fasten the frame in place by looping the "slack" of the rope around the upper end of the block as shown in Figure 5.

Place two loops of rope, each about 20 inches long, around the suspended frame, one loop at each end, and let them hang down. In the lower ends of these loops, place the second frame and suspend the third frame from the second in the same manner as shown in cut on page 10.

Three Frames Save Time and Fuel

By using three frames the housewife will be able to save both time and fuel in drying a quantity of vegetables. For instance if she is drying peas, she can prepare enough to fill one frame and let them be drying while shelling, blanching and cold dipping another batch. When the second frame is spread with peas, those placed in the first frame will have been drying for about 25 minutes. This frame can then be raised until the second frame, suspended from it, is the same distance above the stove the first frame had been. When the third frame of peas are ready to dry, the second will have been drying about 25 minutes and the first about 50 minutes, but more slowly. Frames 1 and 2 are again raised until No. 3 is suspended the right distance from the stove.

When the peas in the third frame are sufficiently dried, those in the second frame, which have been drying for 25 minutes longer



METHOD OF CONSTRUCTING ROPE HARNESS FOR DRYING FRAME.

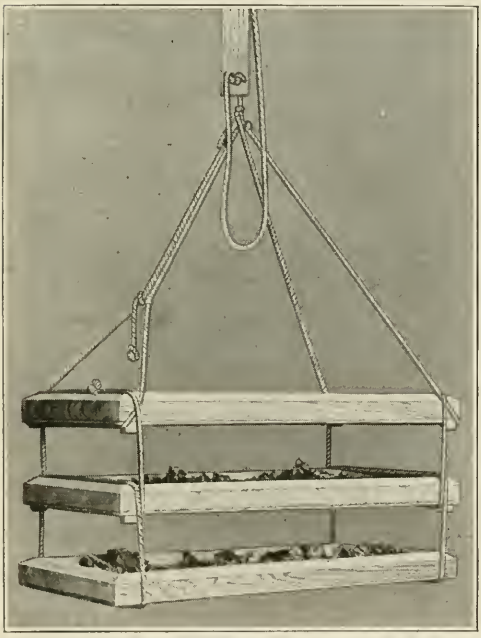
These five figures illustrate various steps described on page 8. Read directions carefully and follow them and you will find it easy.

but the most of the time at a lower temperature, and those in the first frame, which have been drying 50 minutes longer but at a still lower temperature, will have been dried to about the same extent. All the frames can then be removed and emptied and the process begun over again. Never start the three racks to drying at the same time.

In drying products no iron bound rule can be followed, as conditions depend upon the weather, the maturity of the product, the amount of moisture in the product, whether the products where gathered in the morning or in the afternoon, whether they are fresh or wilted, and whether they are large or small in size.

Circulation of Air Important

You must remember you can scarcely find two batches of vegetables and fruit exactly alike and this fact varies the time necessary to dry them. Much depends, also, upon the regularity with which the heat is applied. The main thing is to be sure there is enough air circulating or the vegetable will never get dry. The air must circulate freely.



Method of suspending three drying frames with rope harness

In using coal or wood for fuel, never take the lids off the stove. In using gas or coal oil, if there are lids on the stove remove them and always keep the flame as low as possible. You will be surprised at how low the flame can be used.

In drying any kind of products the same general process is followed, although the details may vary. But to maintain the original taste of the fruit or vegetable, drying should never be done at a higher temperature than 120 degrees Fahrenheit. All experiments have shown that if a greater heat is used, there is danger of burning the product and the delicate taste is sure to be destroyed.

Too Much Heat Injures Flavor

Here is a simple test for determining whether the rack is too hot: Place the palm of your hand against the under side of the bottom of the rack. If you are inclined to jerk your hand away, the rack is too hot and it should be raised to a greater distance from the stove. Don't be afraid of using too little heat but always be afraid of using too much heat.

Drying in the sun is all right but it takes too long. A product that will dry over a stove in three hours will require three days to dry in the sun.

There is no rule by which to ascertain when products are thoroughly dried. Some think products when sufficiently dried will rattle when you lift them up, but this is not a safe test in all cases. The best way to judge is to find out by experience—by drying something until you think it is dry enough and then examining it every few days to see if it is molding. The cracker test is a fairly reliable one. Put a cracker in the bag for a few days when you put the product away. If the product is not dry enough, the cracker will be moist. But remember all tests fail. You must learn by trying and you will find it easy. There is little danger of your drying anything too much if you do not use too much heat, follow directions and use judgment.

If you are called away from the kitchen for a considerable length of time and the article being dried is not yet dry, turn out the burner, put a cloth over the frame and leave it. When you return go on with the drying. Do the same way if you leave it overnight. The product should be covered with a cloth to keep moths and flies off.

During the drying process all products will appear to stick to the rack, and the person doing the drying will be inclined to pull the product loose with the fingers. Some people fail for that reason. The product should be let alone until thoroughly dry, when it will come loose very readily.

Brief directions for drying a number of different products follow and from these the housewife can determine how to dry any fruit or vegetable by following the method employed in drying products of like nature.

Vegetables, like corn, beans, peas, cabbage, potatoes, carrots, and parsnips should be blanched.

They are blanched by being placed in a wire basket, a flour sack or in a piece of cheese-cloth or towel, the ends of which have been twisted together to form a sack, and then placed in boiling water for about eight minutes. They must then be removed and cold-dipped by plunging them at once into cold water and letting them remain there one minute.

Sweet corn should be blanched on the cob, then the kernels cut off and spread to the depth of about one-quarter of an inch upon the bottom of the drying frame.

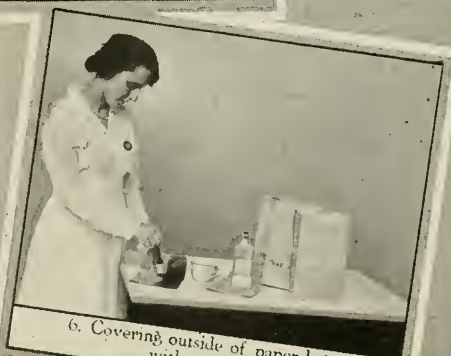
1. Shelling peas.

2. Placing peas in boiling water to blanch.

3. Dipping blanched peas in cold water.

4. Placing peas in rack to dry.

5. Peas ready to be removed from drying frame.



6. Covering outside of paper bags with paraffin.

7. Sufficient dried peas to make two meals for five persons, tied up in sack ready to put away.

Carrots, parsnips and **potatoes** should be scraped and sliced before blanching, then carefully drained of moisture and placed in the drying frames. Only very tender carrots should be dried.

Squash and **pumpkins**—Cut into inch slices, peel off rind, chop into pieces ¼ inch thick. Spread in rack and dry.

Beans—In preparing and selecting product follow method employed in Cold Pack Canning. Never dry tough beans or beans with very much string on the pod. Break off tip ends, blanch, and dry whole, pods and all. If some pods are tough, do not throw them away. Hull them and dry the beans.

Peas—Hull before blanching. Spread on rack to dry.

In drying peas you will have some little peas and some big ones. The little ones will shrivel up; the big ones won't. Sort the peas. Put the big ones in one tray and the little ones in another tray. Naturally the smaller the thing, the quicker it will dry. Five quarts of peas in the pod will be sufficient, when they are hulled, to fill a frame.

Pint of cream in original state and the quantity in dried form

Cabbage can be dried but it is better to preserve it in the form of kraut.

The process to be observed in drying other vegetables and fruits follows:

Beets — Do not blanch as blanching causes them to bleed and they lose some of their nutritive value. They should be peeled, washed, sliced, and laid in the frame to dry.

Rhubarb—Do not blanch. Wash, drain, slice in small pieces and dry. Rhubarb does not need to be peeled if it is tender. In vegetables, apples, and peaches, the mineral salt and most of the nutrition are next to the peeling and if we peel them we destroy some of these qualities.

Greens—Do not blanch. Wash, drain off moisture and dry whole. The only exception to this is that Swiss Chard or any other greens having a thick stem, should be cut up into half-inch pieces.

Asparagus—Cut off all that portion that would be tough when cooked. Cut the remainder into ½ or ¾-inch lengths and dry without blanching.

Tomatoes—Select firm and ripe, not watery fruit. Wash, slice, lay in rack and dry.

Plums—Wash, remove pit, cut into quarters, spread in rack.

Cherries—Wash, remove pit, dry whole.

Strawberries—Spread in racks and allow to remain until no moisture comes from the berry when it is mashed between the fingers. Large berries may be cut in two. Dry all other berries in same manner.

Wild fruits—Use same process as in drying cultivated fruits. Persimmons, figs and the old "Possum Apple" can also be dried.

Miscellaneous Products

The process of drying cream, cottage cheese, eggs and meats is equally simple.

Cream—Cover the bottom of a pie pan to the depth of about a quarter of an inch with the cream; set in rack and dry about eight hours or until you can see the oily cream is free of all water.

Cottage cheese—Cover the bottom of the rack with cheese cloth; spread the cottage cheese on the cloth to the depth of about a quarter of an inch; dry for about four hours, or until the cheese becomes yellowish and grainy.

Eggs—Break the eggs into a crock or dish and beat until the whites and yolks are thoroughly mixed; pour into pie-pans to the depth of a quarter of an inch. Set pans in rack and let dry until egg forms a thick paste. Run paste through a meat chopper and grind it to a putty-like powder. Put the powder back into the pie-tins and dry for about an hour.

Meat—Any kind of lean meat—**not fat meat**—can be dried. Cut up the meat and grind it in a meat chopper; spread on a piece of cheese-cloth and place in rack to dry.

All products, if properly dried, will keep indefinitely if placed in air-tight containers, which need not be sterilized. Glass jars or bottles, should be thoroughly washed.

Vegetables and fruit, except watermelon, can be put away in paper bags that have been made absolutely air-tight by an application of paraffin.

Cut up two ounces of paraffin and dissolve it overnight in eight ounces of gasoline. With a small paint brush cover the bags all over on the outside, with the paraffin. Let the bags dry for two days in the open air before using.

Place in Sacks

Put in each sack enough of the dried product for two meals for your family; tie up sack so it will be air-tight as shown in cut. Hang up anywhere or put on shelf out of the way of rats and mice.

The inexperienced housewife putting dried products away in bags, should examine them every three or four days for about two weeks, or until she knows they are keeping. If any mold shows, the product should be immediately spread in the rack and dried some more.

Eggs, cream, meat and watermelon should be put away in glass, never in paper. Use four or five-ounce wide-mouth bottles and keep tightly corked. Put cottage cheese away in paper bag.

It is not safe to believe that when products are put away in glass, moisture will show on the glass if they are not thoroughly dry. The moisture may be caused by other things.

To restore dried products it is well to remember that the longer the article has been dried, the longer it should be soaked. A good method is to spread product on a level pan or plate and barely cover with water. Once soaked until they have been restored to about their original condition, dried vegetables and fruit can be cooked in about the same manner as though they were fresh. Try cooking in the same water in which they were soaked, with a little additional water added. Also try cooking in fresh water and use the method which the better suits your taste.

Most dried vegetables should be cooked rather slowly. Try cooking both ways—slowly and rapidly—and decide the way you like better.

Follow no set rule. Rather take an interest in your work, use your judgment and acquire skill in finding a method of your own.

To Restore Products

The best process of restoring various products is as follows, it being understood that the relative amounts of water and product given here are only approximate and will vary according to

Five quarts of strawberries before and after drying

conditions. Observation and judgment will easily determine the amount of water needed in each case.

Snap-beans—Soak from eight to 12 hours in 10 pints of water to one pint of dried product.

Beets—Soak two hours in two pints of water to one pint of product.

Corn—Soak from two to four hours in two pints of water to one pint of product. If soaked longer than four hours keep product very cool as there is danger of its souring.

Irish and **sweet potatoes**—Soak from six to eight hours in eight pints of water to one pint of product.

Rhubarb—Soak from six to eight hours in 12 pints of water to one pint of product.

Spinach and other greens—Cook slowly without soaking, or soak two to six hours. Try both methods and follow the one that suits you better.

Okra—Soak until soft.

Onions—Cook slowly without soaking.

Carrots—Cook slowly. No soaking necessary.

Parsnips—Soak two to four hours, using two parts of water to one of product.

Squash or **pumpkin**—Soak eight to 12 hours in 10 parts of water to one of product.

Turnips—Use eight parts of water to one part of product. Bring slowly to boiling point, boil about 20 minutes.

Cherries—Soak six to eight hours in four parts of water to one part of product.

Strawberries, blackberries, raspberries, etc.—Soak four to five hours in six parts of water to one part of dried product.

Half dozen eggs before and after drying

Eggs—Put in earthen vessel, cover with water, but not enough to make product float: let stand over night. Can be used in any manner in which eggs are used, except for poaching, boiling, or in any cooking where the white and yolk are used separately.

Cottage cheese—Cover flat pan ¼ inch deep with product and barely cover with water. Let it stand two hours. Do not use milk to restore it as it is only the water that has been evaporated.

Cream—Can be used in its dried form for cooking and seasoning.

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